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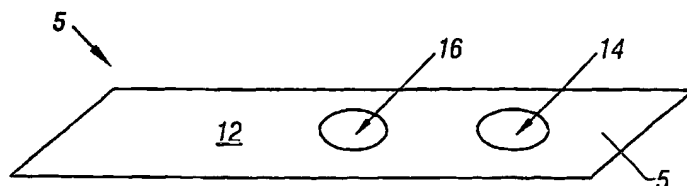
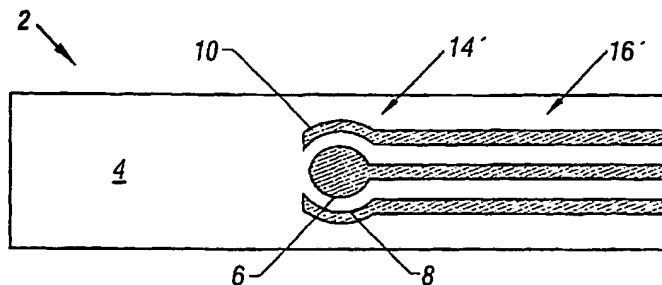
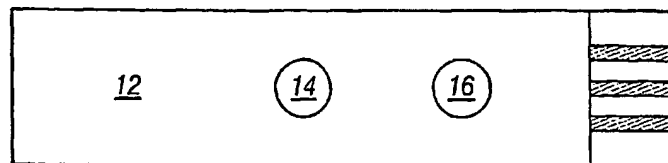
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- (51) International Patent Classification: **G01N 33/543** (74) Agents: **CHEN, Peng et al.**; Morrison & Foerster LLP, Suite 500, 3811 Valley Centre Drive, San Diego, CA 92130-2332 (US).
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[Continued on next page]

(54) Title: **DEVICES AND METHODS FOR DETECTING ANALYTES USING ELECTROSENSOR HAVING CAPTURE REAGENT**



(57) Abstract: The present invention relates to devices comprising electrosensors containing capture reagents, their preparation thereof, and their use for detecting preferably, quantitative measurement, of analyte in a liquid sample. In particular, the invention relates to an enzyme electrosensor, e.g., electroimmunosensor, device for electrochemical detection and preferably, real-time measurement, which is suitable for use at point-of-care settings by unskilled personnel.



Published:

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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11 July 2002

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 00/29748

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/543

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 830 680 A (DUAN CHUANMING ET AL) 3 November 1998 (1998-11-03) cited in the application the whole document	1-15,33, 35-38, 40, 44-46, 51-56, 58-70
X	EP 0 153 875 A (VICTORIA STATE) 4 September 1985 (1985-09-04) claims 1,5	1-15,33, 35-38, 40, 44-46, 51-56, 58-70

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

21 August 2001

Date of mailing of the international search report

03. 12. 2001

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INTERNATIONAL SEARCH REPORT

International Application No.

PC 1/US 99/29748

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category * : Citation of document, with indication, where appropriate, of the relevant passages

Relevant to claim No.

X

WO 98 52042 A (KEENSENSE INC ;KEEN RANDY E
(US)) 19 November 1998 (1998-11-19)

example B

1-15,33,
35-38,
40,
44-46,
51-56,
58-70

INTERNATIONAL SEARCH REPORT

national application No.
PCT/US 00/29748

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see further information sheet invention 1

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-7 (in part), 8-9, 10-15 (in part), 33 (in part), 35-38 (in part), 40 (in part), 44-46 (in part), 51-56 (in part), 58-69, 70 (in part)

Claims 1-7 (in part), 8-9, 10-15 (in part), 33 (in part), 35-38 (in part), 40 (in part), 44-46 (in part), 51-56 (in part), 58-69, 70 (in part) disclose an electrosensor device for detecting an analyte in a liquid, wherein the capture reagent is immobilized on the working electrode via a buffered organic solution containing a ketone or an aliphatic alcohol.

2. Claims: 1-7 (in part), 10-15 (in part), 16-32, 33 (in part), 34, 35-38 (in part), 39, 40 (in part), 41-43, 44-46 (in part), 47-50, 51-56 (in part), 57, 70 (in part), 71-74

Claims 1-7 (in part), 10-15 (in part), 16-32, 33 (in part), 34, 35-38 (in part), 39, 40 (in part), 41-43, 44-46 (in part), 47-50, 51-56 (in part), 57, 70 (in part), 71-74 disclose an electrosensor device for detecting an analyte, comprising a working electrode with a capture reagent immobilized thereupon, a sample application zone and a wicking member.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/29748

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5830680	A	03-11-1998	AU 2365895 A	16-11-1995
			WO 9529395 A1	02-11-1995
			US 5981203 A	09-11-1999

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			AU 7685598 A	08-12-1998
			EP 0986756 A1	22-03-2000
			WO 9852042 A1	19-11-1998
